

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

HYDRO-PHOTON, INC.,  
a Maine Corporation

Plaintiff,

v.

MERIDIAN DESIGN, INC., a California  
Corporation

Defendant.

Civil Action No. 05-11240 GAO

**PLAINTIFF'S STATEMENT OF CLAIM TERMS LIKELY TO BE IN DISPUTE AND  
ITS PROPOSED CONSTRUCTION OF THE SAME**

Plaintiff, Hydro-Photon, Inc. ("HPI"), sets forth below the terms of presently asserted claims 7-10 of U.S. Patent No. 6,110,424 ("the '424 patent") likely to be in dispute, its proposed constructions of the same and the intrinsic and extrinsic evidence supporting such constructions.

**I. Claim 7 - "hand-held"**

**Proposed Construction:** "portable; capable of being handled and used by hand by a user."

**'424 Patent Specification:** "The invention is a portable hand-held water purifier that uses UV light to disinfect small quantities, or batches of water. The water purifier, which is approximately the size and shape of a pen light, has extending from one end a small UV lamp with a quartz cover. The cover, and thus, the lamp, are dipped into a container of water and the lamp is then turned on, to rid the water of infectious agents. As necessary, the user may use the lamp end of the system to agitate the water, to ensure that all of the water passes sufficiently close to the lamp."

**Col. 1, l. 62 - col. 2, l. 4**

"FIG. 1 illustrates a portable, hand-held water purification system 10 for disinfecting water in relatively small batches."

**Col. 2, l. 27-28**

"The entire water purifier is approximately six and three-quarters inches long and five-eighths of an inch in diameter, and fits comfortably in one hand."

**Col. 3, l. 1-4**

“The hand-held UV water purification system 10 is thus a fully portable system that disinfects relatively small quantities or batches, of water, such as the water contained in a drinking glass. The water purifier 10 is small and light weight so that it is easily and conveniently used when traveling, hiking, camping and so forth.”

**Col. 3, l. 39-45**

**‘424 Patent File History:** “The Mahaffey system is not designed to be immersed in water, and the system is not portable in the same sense as the current system.”  
**Amendment After Final Rejection, Serial No. 08/790,750, November 4, 1998, p. 4**

**Dictionary:** “hand-held - compact enough to be used or operated while being held in the hand or hands.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

## **II. Claim 7 - “system”**

**Proposed Construction:** “an assemblage of interacting components.”

**‘424 Patent Specification:** “FIG. 1 illustrates a portable, hand-held water purification system 10 for disinfecting water in relatively small batches.”  
**col. 2, l. 27-28**

**FIGS. 1 and 2, system 10**

**‘424 Patent File History:** “The invention is a hand-held water purification system that immerses an ultraviolet light source into a container of water in order to purify the water.”  
**Amendment, Serial No. 08/790,750, November 18, 1997, pp. 4-5**

**Dictionary:** “system - a group of interacting, interrelated, or interdependent elements forming a complex whole; a group of interacting mechanical or electrical components.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**III. Claim 7 - “purifying unsterilized water”**

**Proposed Construction:** “disinfecting or ridding water, which has not been previously sterilized, of impurities such as bacteria, viruses, algae and so forth.”

**‘424 Patent Specification:** “It is known that ultraviolet (“UV”) light in the germicidal range, of approximately 254 nm, can be used to disinfect water, that is, to rid water of bacteria, viruses, algae and so forth.”  
**Col. 1, l. 13-16**

“The hand-held UV purification system 10 is thus a fully portable system that disinfects relatively small quantities, or batches, of water, such as the water contained in a drinking glass.”  
**Col. 3, l. 39-42**

**Dictionary:** “purify - to rid of impurities; sterile - free from live bacteria or other microorganisms.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

### **III. Claim 7 - “drinking container”**

**Proposed Construction:** “a glass or other receptacle suitable for holding water and from which water can be drunk”

**‘424 Patent Specification:** “Referring now to Fig. 2, a user places the lamp end 11 of the water purifier 10 in water 34 that is, in the example, contained in a drinking glass 32.”  
**Col. 3, l. 19-21**

**FIG. 2, container 32**

**‘424 Patent File History:** “The invention is a system for purifying water that is held in a conventional container, such as a glass, cup or bowl.”  
**Amendment, Serial No. 08/790,750, November 18, 1997, p. 4**

“The Lin patent does not teach or suggest a system that purifies water that is held in a conventional container.”  
**Amendment, Serial No. 08/790,750, November 18, 1997, p. 6**

“The combination thus does not teach or suggest a UV water purification system that has a lamp end that extends outwardly from the system and can be used in conjunction with a conventional water glass ...”  
**Amendment After Final Rejection, Serial No. 08/790,750, November 4, 1998, p. 5**

**Dictionary:** “container - a receptacle, such as a carton, can or jar, in which material is held or carried.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**V. Claim 7 - “case”**

**Proposed Construction:** “a structure that encloses, and protects from water, components of the system contained therein”

**‘424 Patent Specification:** “The battery 14 and related circuitry are encased in a water-resistant tube 24.”  
**Col. 2, l. 66-67**

**‘424 Patent File History:** “The current system includes a cylindrical case that houses a battery, switches and so forth, and an ultraviolet lamp and associated quartz cover that extend outwardly from the case.”  
**Amendment, Serial No. 08/790,750, July 17, 1997, p. 4**

**Dictionary:** “case - a container; a receptacle; a container with its contents.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**VI. Claim 7 - “ultraviolet light source”**

**Proposed Construction:** “a component or group of components that emits radiation in the germicidal region of the ultraviolet spectrum”

**‘424 Patent Specification:** “It is known that ultraviolet (“UV”) light in the germicidal range, of approximately 254 nm, can be used to disinfect water, that is to rid water of bacteria, viruses, algae and so forth.”

**Col. 1, l. 13-16**

“The system includes, extending from a first end 11, a pen-light sized quartz UV lamp that emits light in the germicidal range.”

**Col. 2, l. 29-31**

**FIG. 2, UV lamp 12**

**Dictionary:**

“source - the point at which something springs into being or from which it derives or is obtained; something that causes, creates or initiates.”

**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**VII. Claim 7 - “outwardly extending”**

**Proposed Construction:** “having one end within the case and a second opposite end spaced away from the case”

**‘424 Patent Specification:** “The system includes, extending from a first end 11, a pen-light sized quartz UV lamp 12 that emits light in the germicidal range.”  
**Col. 2, l. 29-31**

“Referring now to FIG. 2, a user places the lamp end 11 of the water purifier 10 in water 34 that is, in the example, contained in a drinking glass 32.”  
**Col. 3, l. 19-21**

“The user may use the lamp end of the system 10 to stir the water 34 ...”  
**Col. 3, l. 29-30**

**FIGS. 1 and 2, UV lamp 12; first end 11**

**‘424 Patent File History:** “For example, such a combination would not teach or suggest a system in which an outwardly-directed UV light source is immersed in non-flowing water and then turned on to purify the water, or a method of operating such a system ...”  
**Amendment Serial No. 08/790,750, June 2, 1998, p. 9**

**Dictionary:** “extend - to stretch or spread (something) out to greater or fullest length; outward - of, located on, or moving toward the outside or exterior; outer.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**



### **VIII. Claim 7 - “submerging”**

**Proposed Construction:** “dipping; placing.”

**‘424 Patent Specification:** “The cover, and thus the lamp, are dipped into a container of water and the lamp is then turned on, to rid the water of infectious agents.”  
**Col. 1, l. 66 – Col. 3, l. 1**

“Referring now to FIG. 2, a user places the lamp end 11 of the water purifier 10 in water 34 that is, in the example, contained in a drinking glass 32.”

**Col. 3, l. 19-21**

**‘424 Patent File History:** “For example, such a combination would not teach or suggest a system in which an outwardly-directed UV light source is immersed in non-flowing water and then turned on to purify the water, or a method of operating such a system ...”  
**Amendment Serial No. 08/790,750, June 2, 1998, p. 9**

**Dictionary:** “submerge - to place under water.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**IX. Claim 7 - “control means ...”**

This is a means-plus-function element which is to be construed in accordance with 35 U.S.C. § 112, par. 6. The law requires that the Court first determine the claimed function for this element, and then determine the structure disclosed in the specification that corresponds to the claimed function. *See, e.g., JVW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2005); *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1308 (Fed. Cir. 1998).

**Proposed Construction:****Claimed Function: “turning the light source on and off”**

The law requires that the claimed function be taken from the language of the claim element itself; it is improper to import functional limitations into the claimed function from the specification. *See, e.g., Micro Chemical v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

**Corresponding Structure: “on-off switch 28 and switches (not shown) that connect and disconnect the source of power (e.g., the ballast circuitry 13 and battery 14) and the lamp 12”**

The law states that the corresponding structure is only that part of the structure that is necessary to perform the claimed function. *See, e.g., Wenger Mfg. v. Coating Machinery*, 239 F.3d 1255, 1263 (Fed. Cir. 1998). The structure corresponding to a function recited in a means-plus-function limitation must actually perform the recited function, not merely enable or improve the performance of the function. *See, e.g., Asyst Technologies, Inc. v. Empack, Inc.*, 268 F.3d 1364, 1369-70 (Fed. Cir. 2001); *Axcelis Technologies, Inc. v. Applied Materials, Inc.*, 66 U.S.P.Q.2d 1039, 1041 (D. Mass. 2002).

**‘424 Patent Specification:** “The user controls the system with an on-off switch 28.”  
**Col. 2, l. 8**

“The user turns the system 10 on by moving the on-off switch 28 to the appropriate position.”

**Col. 2, l. 21-23**

“A liquid-level sensor 20, which is connected to switches (not shown) between the lamp 12, and the ballast circuitry 13 and ballast 14, prevents the UV lamp from turning on until it is fully immersed in water.”

**Col. 2, l. 45-48**

“When the liquid-level sensor 20 determines that the lamp is fully immersed in the water, the sensor closes the switches (not shown) that separate the ballast circuitry 13 and the battery 14 (FIG. 1) from the lamp 12, and the lamp then turns on.”

**Col. 3, l. 33-37**

**FIGS. 1 and 2, on-off switch 28**

Other structures or components disclosed in the ‘424 patent specification, including the ballast circuitry 13, battery 14, liquid-level sensor 20 and timing circuit 22, are not part of the corresponding structure because they are not necessary to perform the claimed function of the “control means” element, i.e., turning the light source on and off. These structures merely enable or improve the performance of the claimed function. For example, in the illustrative embodiment disclosed in the ‘424 patent, the ballast circuitry 13 and battery 14 combine to form a source of power that can be connected to or disconnected from the lamp 12. The liquid-level sensor 20 prevents the ballast circuitry 13 and battery 14 from being connected to the lamp 12 until it detects water, thus making the system safer to use. However, none of these components actually performs the recited function of the “control means” element, i.e., turning the light source on and off. See *Wenger Mfg., Asyst Technologies and Axcelis Technologies, supra*. Only the switches do that.

The above construction of the corresponding structure of the “control means” element is confirmed by the doctrine of claim differentiation. Battery 14, liquid-level sensor 20 and timing circuit 22 are expressly recited in claims 10, 8 and 9, respectively, of the ‘424 patent, which depend directly or indirectly from claim 7. Because of this, the law presumes that these structures are not part of the corresponding structure of the “control means” element recited in claim 7. *See, e.g., Free Motion Fitness, Inc. v. Cybex International Inc.*, 423 F.3d 1343, 1351 (Fed. Cir. 2005); *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998).

**Dictionary:**

“control - an instrument or set of instruments used to operate, regulate, or guide a machine or vehicle; switch - a device used to break or open an electric circuit or to divert current from one conductor to another; to connect, disconnect, or divert (an electric current) by operating a switch.”

**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**X. Claim 7 - “contained in the case”**

**Proposed Construction:** “enclosed and protected within the structure from which the light source outwardly extends”

**‘424 Patent Specification:** “The battery 14 and related circuitry are encased in a water-resistant tube 24.”  
**Col. 2, l. 66-67**

**‘424 Patent File History:** “The current system includes a cylindrical case that houses a battery, switches and so forth, and an ultraviolet lamp and associated quartz cover that extend outwardly from the case.”  
**Amendment, Serial No. 08/790,750, July 17, 1997, p. 4**

**Dictionary:** “contain - to have within; hold; to be capable of holding.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**XI. Claim 8 - “liquid level sensor”**

**Proposed Construction:** “an electrical component or group of electrical components that detects the presence of water”

**‘424 Patent Specification:** “A liquid-level sensor 20, which is connected to switches (not shown) between the lamp 12, and the ballast circuitry 13 and battery 14, prevents the UV lamp from turning on until it is fully immersed in water.”

**Col. 2, l. 45-48**

“The sensor 20 may, for example, be a capacitive-type sensor that senses the difference in capacitance of water and the surrounding air. When the sensor determines that it is in water, which necessarily means that the lamp is immersed in the water, the sensor closes the switches and allows the lamp to be turned on.

**Col. 2, l. 55-60**

“When the liquid-level sensor 20 determines that the lamp is fully immersed in the water, the sensor closes the switches (not shown) that separate the ballast circuitry 13 and the battery 14 (FIG. 1) from the lamp 12, and the lamp then turns on.”

**Col. 3, l. 23-27**

**FIGS. 1 and 2, liquid level sensor 20**

**Dictionary:**

“sensor - a device that receives and responds to a signal or stimulus”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

## **XII. Claim 9 - “timing circuit”**

**Proposed Construction:** “an electrical components or group of electrical components that changes state or condition after a predetermined time”

**‘424 Patent Specification:** “The water purifier 10 may also include a timing circuit 22 connected between the sensor and the lamp and associated circuitry. The timing circuit turns the lamp off a predetermined time, for example, 15 seconds, after the sensor turns the lamp on.”  
**Col. 2, l. 61-65**

“The sensor 20 also starts the timing circuit 22 that keeps the lamp lit for a predetermined time.”  
**Col. 3, l. 27-28**

**FIGS. 1 and 2, timing circuit 22**

**Dictionary:** “circuit - a configuration of electrically or electromagnetically connected components or devices; timing - the regulation of occurrence, pace or coordination to achieve a desired effect.”  
**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

**XIII. Claim 10 - “the means for turning on the light source includes a battery”**

**Proposed Construction:** “that part of the control means of claim 7 that turns on the light source further includes a battery source of power”

**‘424 Patent Specification:** “The lamp is powered through ballast circuitry 13 by a battery 14, which in the exemplary system is a size AA, 3.4 volt rechargeable lithium battery.”

**Col. 2, l. 32-34**

“The battery 14 and related circuitry are encased in a water-resistant tube 24.”

**Col. 2, l. 66-67**

**Dictionary:**

“battery - two or more connected cells that produce an electrical current.”

**The American Heritage Dictionary of the English Language, Fourth Edition (2000).**

Respectfully submitted,

Dated: November 10, 2005

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